THE ROAD TO INTEROPERABILITY

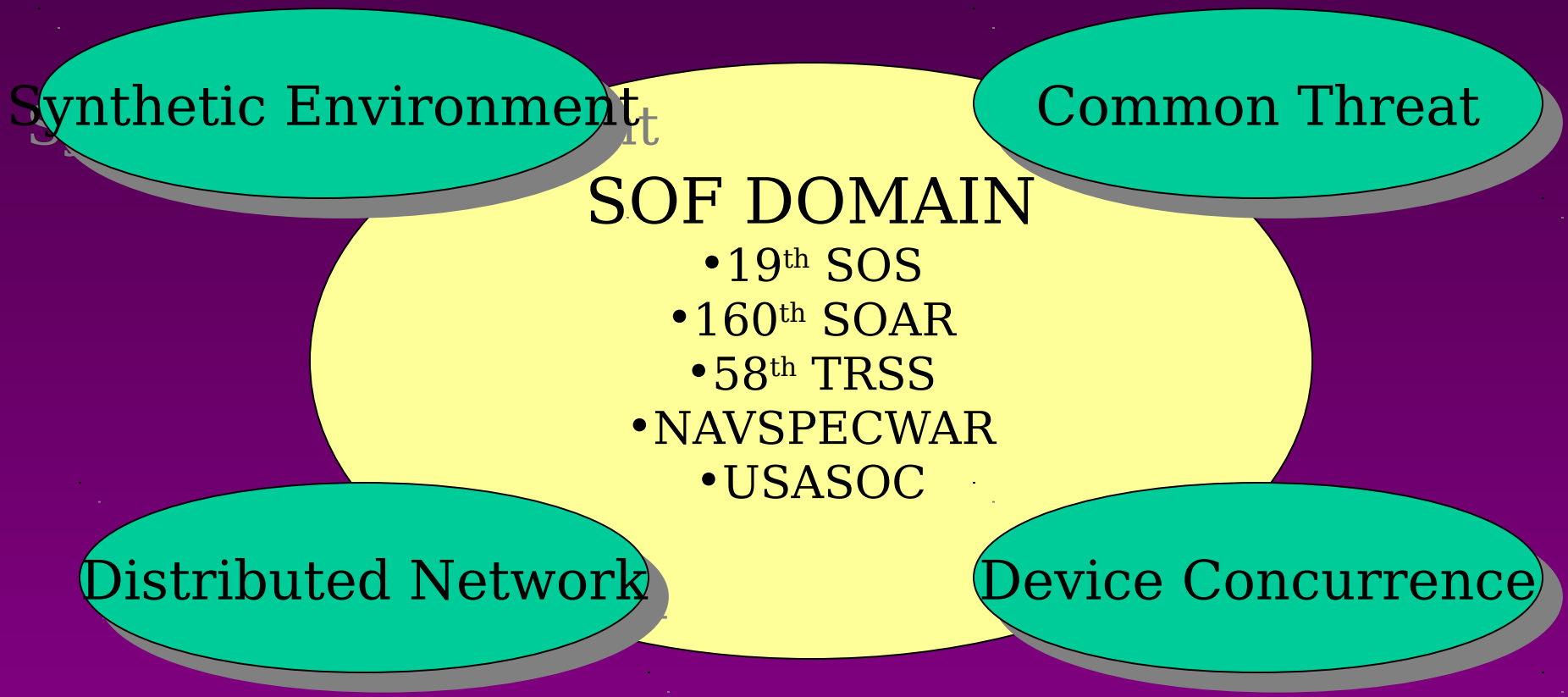
“If you don’t know where you are going any road will get

Requirements

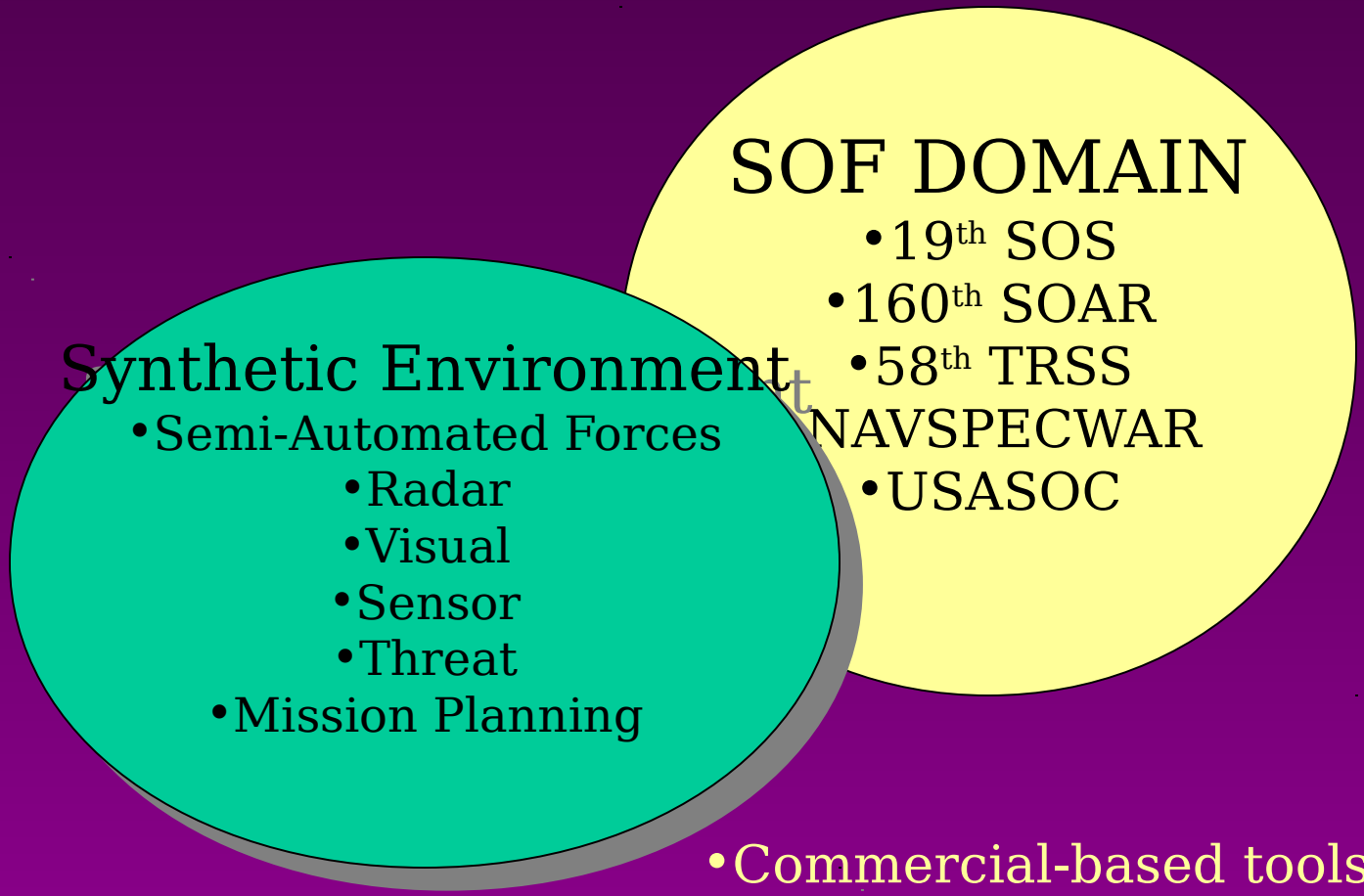
- Standard,correlated synthetic environment
- Full integration of simulation and live forces for training and mission rehearsal
- Standardized distributed operations
- Utilization of GOTS and COTS
- Common distributed EW environment
- Concurrent training systems (at least relative concurrence)

Assumptions

- Standing IPT for administration of SOCOM M&S operations
- Working Groups organized by major tenant areas of Interoperability
- Command driven standards for interoperability
- Current operational capability is point of departure for future planning
- Utilization of GOTS and COTS



These are the basic tenants of Interope



•Commercial-based tools and standards are the keys that will drive interoperability

•Rendering H/W can then be evaluated obj in order to meet resolution and content re

Synthetic Environment
Tools Today

- Commercial tools being used today are based on industry standards as a result of IPT trade study
- Tools evaluated on current capability and vendor migration strategy
- Some tools in use are required to support standard data conversion to proprietary formats for run-time

Synthetic Environment
Tools Tomorrow

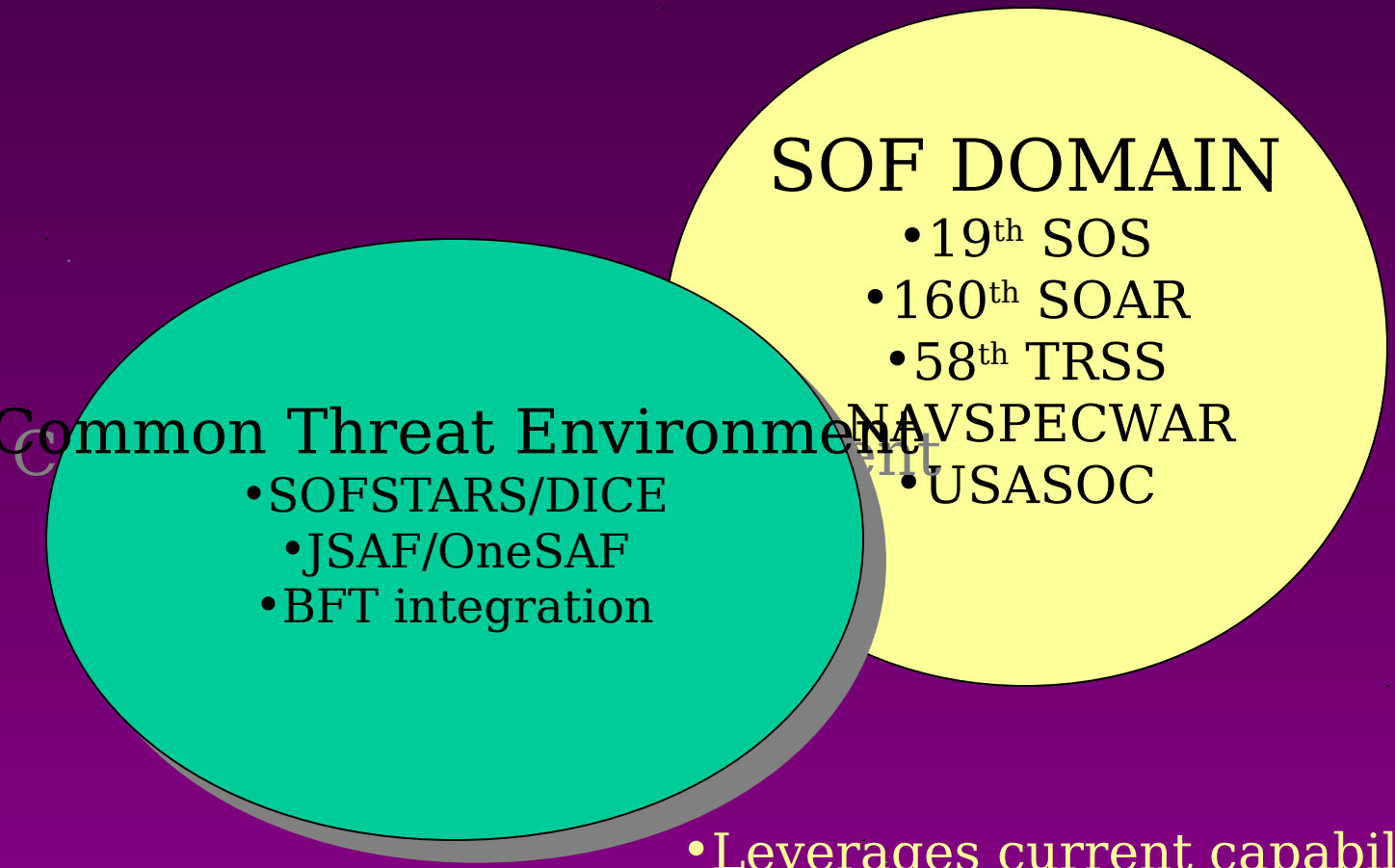
- Perform the majority of data editing on the industry standard layers
  - Requires additional investment in resources to establish and efficient production environment
- Strongly encourage visual system vendors to incorporate direct ingestion of standard data formats into runtime
- There are 4 outstanding process/tool issues that need addressing: SEDRIS, Enhanced Terrain, Automatic Feature Extraction, and Metadata control

Synthetic Environment
Tools Future

- Continuous Process Improvement through working group studies, and joint service and coalition leveraging.
- Funding committed to technology insertion for currency and efficiency (Result of working group activity)

Synthetic Environment Recommendations

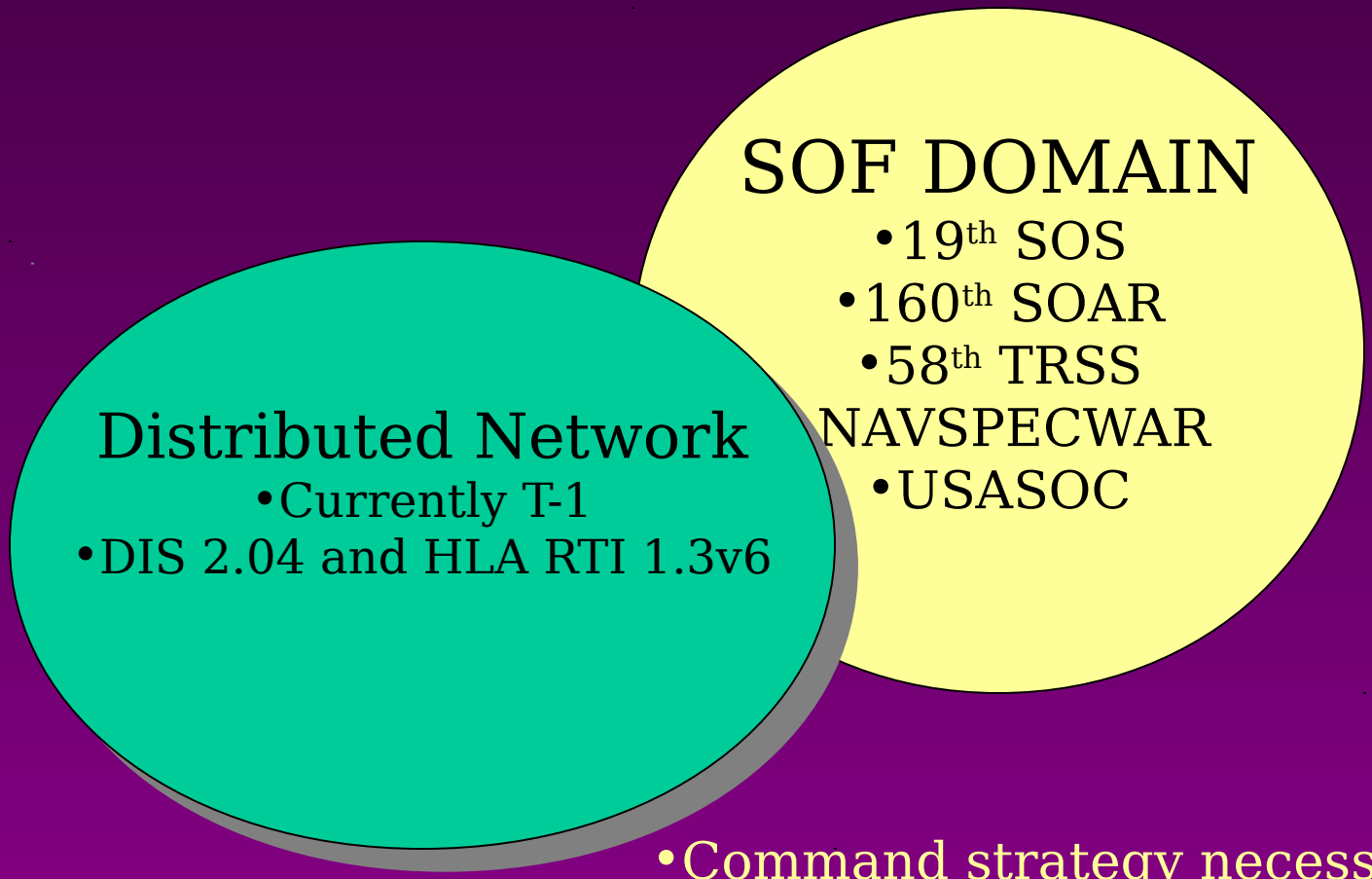
- Set a baseline and enforce standards based on SE requirements
- Quarterly synthetic environment working groups that evaluate tools status and make recommendations to the IPT.
- Acquire Image Generators based on above baseline and standards
- Ensure concurrent upgrade of systems (IG and Tools). This will significantly enhance interoperability through tight correlation



- Leverages current capability to full integrate Live and simulation.
- GOTS and COTS tools
- Distributed network implementation reduces initial cost for EWO solution and downstream changes

Common Distributed EW Environment

- Leverages SOFSTARS advances to implement common distributed EW environment
- SOFSTARS currently in place at Hurlburt, Ft Campbell, TACCSF, and Nellis CAOC
- Allows for Live/Simulation integration for much more dynamic training and rehearsal.
- Full implementation reduces complexity of EW simulation systems, and provides a scaleable capability for training, MR, and deployed operations.



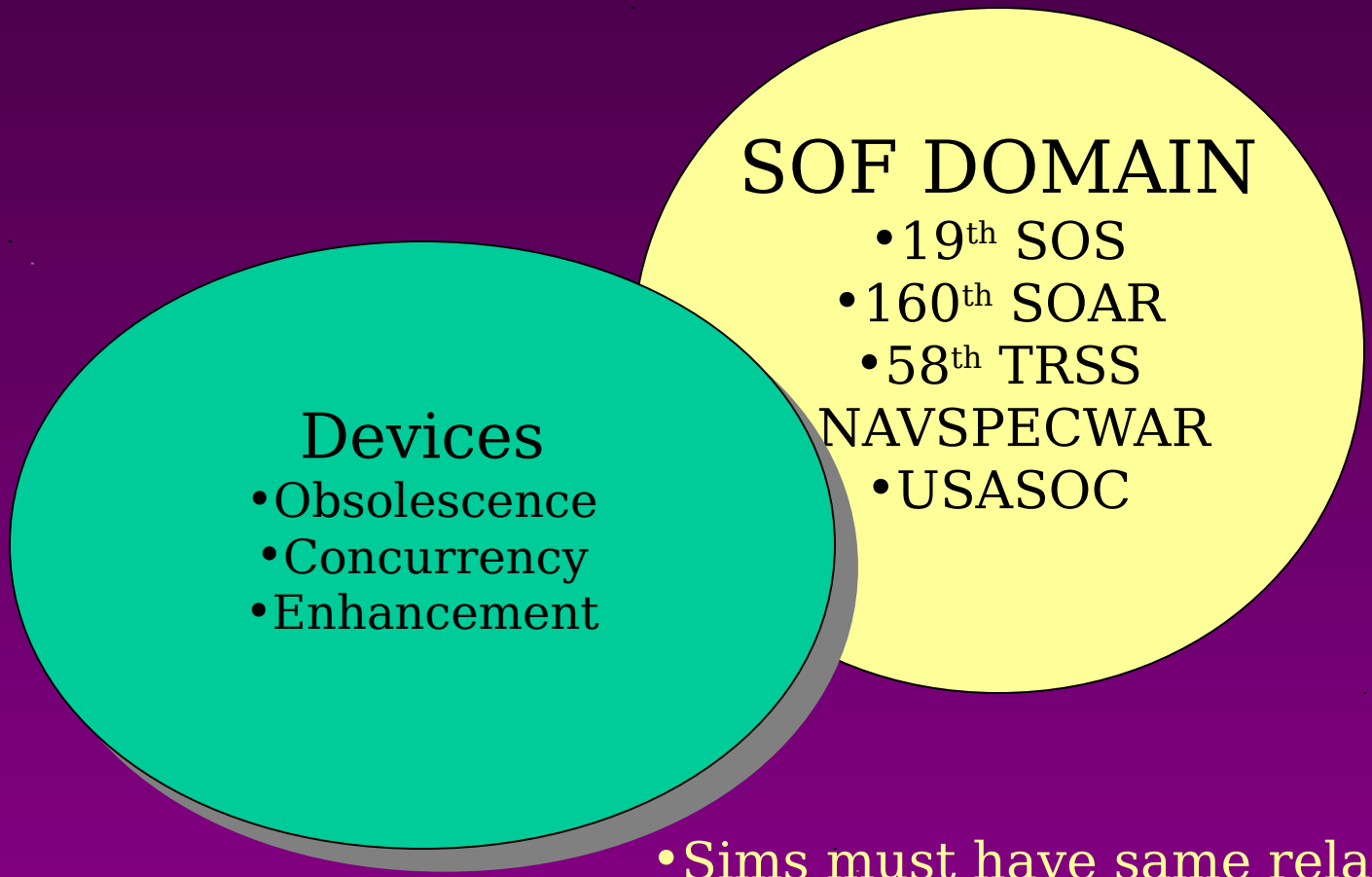
- Command strategy necessary for measuring required growth so that unnecessary changes are avoided.
- Hurlburt, Kirtland, and Ft Campbell all running interoperable DIS and HLA

Distributed Network Comm

- DIS 2.04 and HLA RTI 1.3v6 with SOF FOM 0.5 are current versions across the majority of SOF with Kirtland currently running 1.3NGv4 on the SOFNET and 1.3v6 on the MC-130H WST
- DIS 2.04 and HLA 1.3v6, SOF FOM 0.5 are tested across SOF assets on the current T-1 infrastructure
- Bandwidth on the current infrastructure is not yet an issue. No defined requirements drive a change to this architecture.

Distributed Network Comm Recommendations

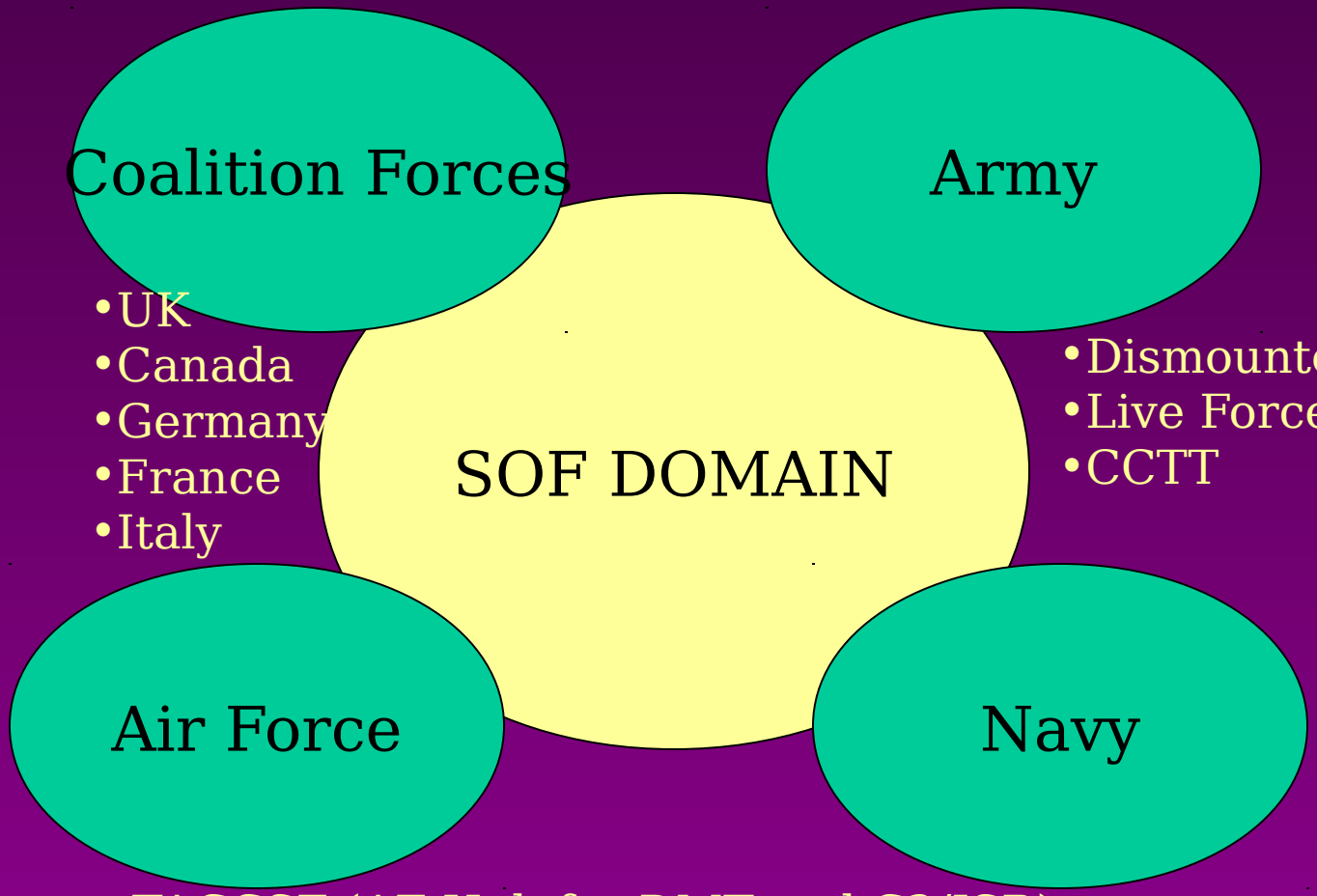
- Upgrade all to SOF FOM 1.0
- Upgrade VR Link from 3.7 to to 3.7ngc which works with current HLA and DIS versions
- Upgrade Gateway hardware and software
- Migrate all sites to HLA RTI 1.3NGv4
- Delay migration to IEEE version of the HLA RTI until there is organized national government support in the form of funding, and the necessary industry tool development to support this standard



- Sims must have same relative value for mods as the aircraft
- Concurrency is essential for best interoperability
- Simulation IPT must have direct connection to SPO
- ATARS concurrency and modification

Other Components

- Radios: Currently all SOF and other distributed partners are using ASTi. Upgrades, such as a Remote Management Capability are currently being researched to increase efficiency of operations.
- SAF: The majority of SOF is using MODSAF 5.0.
  - Recommend migration to OneSAF as a standard due to promising development for support of ground operations as well as the aviation requirements
- Data Loggers: Records DIS and HLA traffic for replay. Mak's 3.7ngc supports a host of FOMs as well as the required RTIs and DIS.



- UK
- Canada
- Germany
- France
- Italy

- Dismounted Infantry
- Live Force integration
- CCTT

- TACCSF (AF Hub for DMT and C2/ISR)
- Nellis (connection to CAOC)
- AFIWC (Threat support)
- AFRL (R&D, F-16s)
- Space Warfare

- SEALS
- Fleet Mission Preview Rehearsal

Conclusions

- Use current operational capability and relationships as the foundation architecture and development standard. (Don’t pay twice)
- A proactive and consistent IPT is critical
- A detailed SOCOM command strategy for standards of interoperability is essential to success.
- IPT leadership must be active in other DoD efforts for best value leveraging of Joint activities.